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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/802,527 | 03/07/2001 | Thomas Matthew McCann | 1322/42/2 | 7776 |

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| ART UNIT | PAPER NUMBER |
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2685

DATE MAILED: 02/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|------------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/802,527 | MCCANN, THOMAS MATTHEW | |
| | Examiner | Art Unit | |
| | Blane J Jackson | 2685 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-53 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>5/04, 7/03, 11, 02, 3/01, 01/02</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sjodin (US 6,097,948).

As to claim 1, Sjodin teaches a network element for receiving a signaling message containing mobile application part (MAP) protocol information and screening the message based on the MAP protocol information the network element comprising:

A communication module capable of receiving from a communication network and transmitting to a communication network a signaling message including MAP information (figure 1, communication module: mobility server (48) of communication system (10) with MAP interfaces consistent with the GSM system, column 5, lines 34-54, column 6, lines 35-65 and MAP: column 7, lines 29-45),

A *transaction capabilities application part (TCAP)* screening process for receiving the signaling message from the communication module and determining whether the signaling message is a candidate for MAP screening based on at least one SCCP parameter in the signaling message (figure 6, conventional control stack comprising the TCAP, SCCP and MTP layers where the screening program is incorporated within the

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TCAP, column 10, lines 1-44 and column 11, lines 1-37 and determining screening candidates: column 12, lines 26-34),

A MAP screening process for in response to receiving the message from the TCAP screening process, analyzing the MAP information to determine whether authorization is required for routing the signaling message to a destination node (column 11, line 40 to column 12, line 55).

Sjodin teaches a communication signaling system network element including a screening function to screen MAP operations implemented as a separate software module or as part of the TCAP protocol layer of the conventional protocol stack (column 11, lines 41-44) but is silent as to the screening process utilized in the signaling connection control part (SCCP) protocol layer. However, since MAP messages are SS7 messages that reside on top of the TCAP and SCCP protocol layers, it would have been obvious to one of ordinary skill in the art at the time of the invention to alternatively implement the screening application of Sjodin within the SCCP layer to determine whether to route the message based on the MAP information.

As to claim 2, Sjodin teaches in response to receiving notification from the MAP screening process that authorization is required for the signaling message, the SCCP screening process is adapted to perform authorization screening on the signaling message based on at least one SCCP parameter in the signaling message (check parameter procedure, column 12, lines 26-34).

As to claims 3-7, Sjodin teaches a network element to provide screening of mobility management such as MAP and other signaling messages, column 14, lines 30-41 and column 13, lines 35-47, where specific cited MAP messages include destination or origination address information, column 12, lines 35-55, anytime interrogation (ATI) service and short message service (SMS), applicant's specification, page 2, lines 9-19.

As to claim 8, Sjodin teaches the process is adapted to perform authorization screening based on a calling party address value in the signaling message (destination address: column 12, lines 35-46).

As to claim 9 with reference to claim 8, Sjodin teaches the process is adapted to route the message to the destination in response to determining that the signaling message passes the authorization screening (column 12, lines 35-55).

As to claim 10 with respect to claim 9, Sjodin teaches the process is adapted to route the message to an HLR in response to determining that the signaling message passes the authorization screening (allowed: column 12, lines 51-55 and figures 6 and 8, the message passes through the protocol stack to the MSC and HLR, column 10, lines 1-7).

As to claim 11 with respect to claim 9, Sjodin teaches the process is adapted to route the message to an VLR in response to determining that the signaling message

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passes the authorization screening (a VLR inherently in the system as depicted in figure 4).

As to claims 12-14 with respect to claim 9, Sjodin teaches a network element to provide screening of mobility management such as MAP and other signaling messages, column 14, lines 30-41 and column 13, lines 35-47, where specific cited MAP messages include destination or origination address information, column 12, lines 35-55, anytime interrogation (ATI) service and short message service (SMS), applicant's specification, page 2, lines 9-19.

As to claim 15, Sjodin teaches the process is adapted to route the message to a database server in response to determining that the signaling message passes the authorization screening (logged to database: column 11, lines 41-61).

As to claim 16, Sjodin teaches the signaling message contains a database query (example of an Invoke request, column 11, line 62 to column 12, line 2).

As to claim 17, Sjodin teaches the signaling message is an SS7 message (column 10, lines 31-44).

As to claim 18, Sjodin teaches the TCAP API interfaces the TCAP with a conventional TCP/IP application, figure 8, column 10, line 62 to column 11, line 7.

As to claims 19 and 20, Sjodin teaches a TCP/IP application to link the protocol stack and mobility manager (66) where the TCP/IP is any conventional application to translate between the SS7 from the protocol stack and outside IP addressing scheme, column 11, lines 8-25.

As to claims 21-23, Sjodin teaches a method for determining whether a signaling message received by a network routing element should be discarded or routed to a destination node comprising:

At a first network element, receiving a signaling message containing mobile application part (MAP) and signaling connection control part (SCCP) information from a communication network (figure 1 and 6, alternatively includes GSM, PLMN, DECT, PTN system standard networks, column 5, lines 34-53 and column 10, lines 1-44),

Determining whether the received signaling message satisfies pre-determined routing requirements by examining at least one of the MAP information and the TCAP information contained in the signaling message (examines the MAP information in the TCAP protocol layer, before allowing routing determined in the SCCP layer, column 11, lines 1-37) and

In response to determining that the signaling message satisfies the pre-determined routing requirements, routing the signaling message to a destination node (screening operation determines example whether or not to route message through

conventional protocol stack to the SS7 signaling channel based on destination or origination address, column 12, lines 35-55).

Sjodin teaches a communication signaling system network element including a screening function to screen MAP operations implemented as a separate software module or as part of the TCAP protocol layer of the conventional protocol stack (column 11, lines 41-44) but is silent as to the screening process utilized in the signaling connection control part (SCCP) protocol layer. However, since MAP messages are SS7 messages that reside on top of the TCAP and SCCP protocol layers, it would have been obvious to one of ordinary skill in the art at the time of the invention to alternatively implement the screening application of Sjodin within the SCCP layer to determine whether to route the message based on the MAP information.

As to claim 24, Sjodin teaches where the communication network is an ANSI-41 based network (column 7, lines 29-45).

As to claims 25-29, 32-35 and 42-45, Sjodin teaches a communication network with a conventional protocol stack including a screening process of MAP parameters to screen and route cleared messages to a number destinations including a HLR, VLR, AuC EIR or database server based on standard SCCP information, figures 1-4, column 5, line 41 to column 6, line 49).

As to claim 30, Sjodin teaches a number of destination nodes determined in the protocol stack reading the MAP messages typical to a communications network as taught in claims 25-29 which would inherently include a short message service center (SMSC) where MAP messages include ATI and SMS services, page 2, lines 9-12.

As to claim 31, Sjodin teaches the signaling message contains a database query (example of an Invoke request, column 11, line 62 to column 12, line 2).

As to claims 36, 37 and 41, Sjodin teaches a system with an ability to examine and route a message based on the origination address (column 11, lines 35-55).

As to claim 38, Sjodin teaches the TCAP API interfaces the TCAP with a conventional TCP/IP application, figure 8, column 10, line 62 to column 11, line 7.

As to claims 39 and 40, Sjodin teaches a TCP/IP application to link the protocol stack and mobility manager (66) where the TCP/IP is any conventional application to translate between the SS7 from the protocol stack and outside IP addressing scheme, column 11, lines 8-25.

As to claim 46, Sjodin teaches in response to determining that the signaling message does not satisfy the pre-determined routing requirements, discarding the signaling message (column 11, lines 26-37).

As to claim 47, Sjodin teaches a network communication system that would inherently provide an error message in the event of a stopped call to the calling party in various forms well known in the art.

2. Claims 48-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sjodin (US 6,097,948) with a view to Titus et al. (US 2002/0029189 A1).

As to claims 48-50, Sjodin teaches a system for performing mobile application part (MAP) screening of signaling messages, the system comprising:

A signaling gateway including a MAP screening module for receiving signaling messages containing MAP information and determining whether to route the messages to a destination node based on the MAP information (a screening function included in the TCAP of a protocol stack of a network element within a communication system to control message routing based on monitored MAP messages, column 11, line 1 to column 12, line 34).

Sjodin does not teach a MAP billing system operatively associated with the signaling gateway for generating billing information based on the number of messages routed by the MAP screening module.

Titus teaches a prepaid server for use by wireless carriers and Internet service providers or information content delivery services for the purpose of applying real-time billing charge for each message request, paragraphs 26-34, 36 and 55. Titus specifically teaches the prepaid server of figure 2 equipped with a SS7 interface to

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receive trigger messages from a SMSC to determine billing based on each message request, paragraphs 36-43.

It would have been obvious to one of ordinary skill in the art at the time of the invention to recognize the MAP messages screened by Sjodin would be used by the billing server of Titus to appropriately bill the system user.

As to claims 51-53, Sjodin teaches the MAP screening module is adapted to perform screening for conventional MAP operations, column 13, lines 36-47, including location and subscriber state ATI queries, information about the origination and destination address and the results of the screening may be logged into an appropriate database, column 11, lines 41-61, but is silent as to a billing system adapted to generate billing records based on the number of ATI queries routed by the MAP module.

Titus teaches a prepaid server compatible to wireless carrier networks, figures 1 and 2, paragraph 55 to initiate billing for each use of network services including short message servicing centers, prepaid and web gateway application and prepaid Internet access. It would have been obvious to one of ordinary skill in the art at the time of the invention to recognize various MAP messages as screened by Sjodin to trigger the billing server of Titus for billing for various message services provided to the communication network users.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. McConnell et al. (US 2002/0015403 A1) discloses a gateway with an adaptation layer and an HTTP client with an event manager to capture events including billing. Hamann et al. (US 6,757,745) discloses a controllable network element operating as a server with functionalities including a firewall, access check and filters. Boltz (US 6,311,055) discloses an intelligence network node with screening lists for call control. Kung et al. (US 6,775,267) discloses a telephone network adapted for broadband access and billing for use with IP based system infrastructure. Curry et al. (US 6,233,234) discloses an access gateway between a telephone network and a packet switched data network, the Internet. Allison et al. (US 2003/0083078) discloses a routing node with SMS message discrimination module to control unwanted SMS messages.

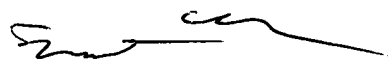
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blane J Jackson whose telephone number is (703) 305-5291. The examiner can normally be reached on Monday through Friday, 8:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (703) 305-4385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BJJ



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